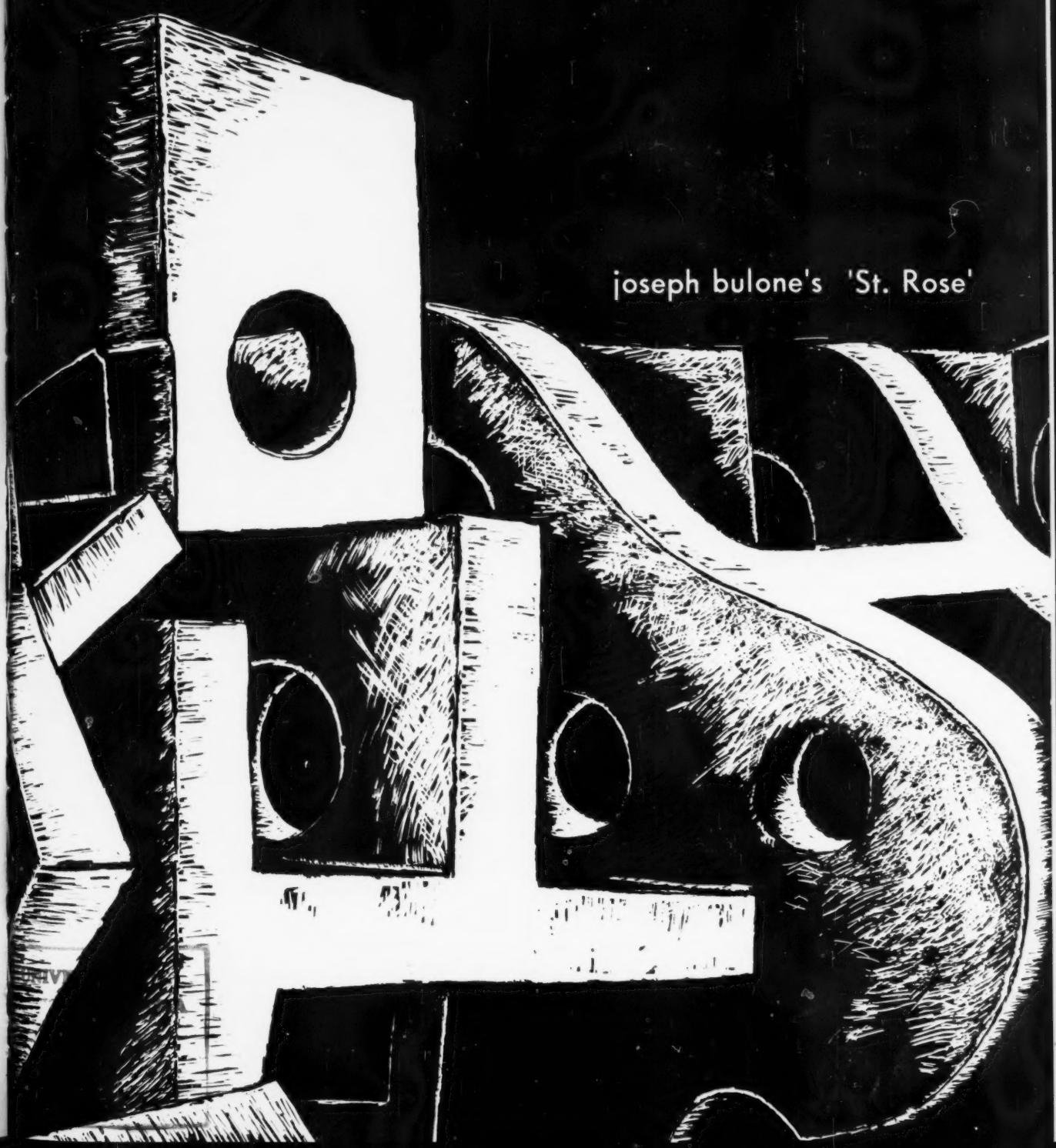
Ceramics



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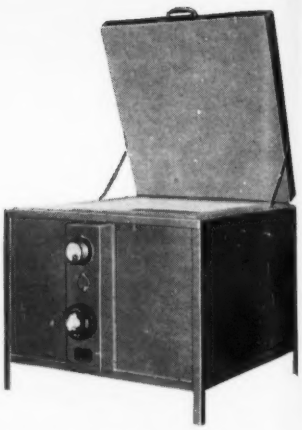

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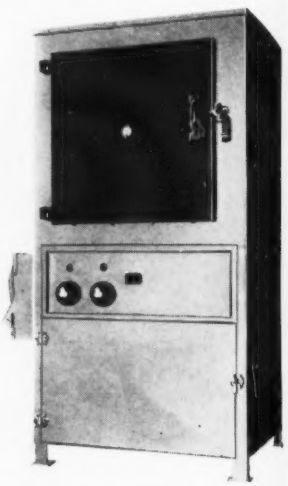

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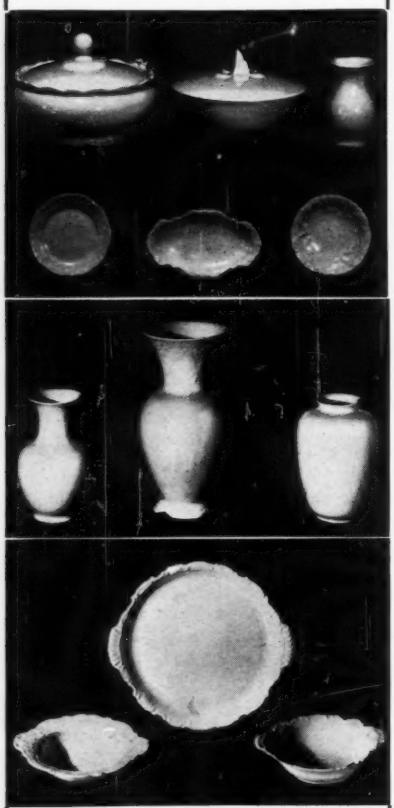

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letters

Pacific Northwest Forgotten?

Gentlemen:

I recently moved from the East to the Pacific Northwest. I find that there are very few supply houses for ceramic hobbyists in this locality (we are near Tacoma, Wash.). In ordering from the East I have a freight problem . . .

Perhaps an open letter asking for Pacific Coast supply houses might help those in my position . . . Your first issue was delightful—I'm certainly happy to be a subscriber.

(MRS.) JOHN C. CARPENTER
Puyallup, Wash.

'Enameling . . . EVERY Time'

Gentlemen:

Thank goodness your examples are of simple and dignified types of work, the better to encourage amateurs along these lines!

I am very much interested in enameling, and hope you will think of this group of workers *every* time you plan an issue.

DORIS M. COULTER
Bryan, Texas

Gentlemen:

I was very well pleased with my first copy of CERAMICS MONTHLY, and was indeed happy to find an article on metal enameling. I hope you will include many more in future issues . . .

FREDERICK C. KEBBEL
Dearborn, Mich.

Adelaide Robineau Remembered

Gentlemen:

It is difficult for me to express the pleasure and exultation I felt reading the article on Adelaide Alsop Robineau [see CERAMICS MONTHLY, January], a truly wonderful person who not only gave the instruction but imparted inspiration, ambition, and confidence to her students. I speak from experience as I was fortunate enough to have been a pupil of hers during the summer of 1899, in New York City. The qualities she possessed and passed on to me have borne quite a harvest in the training of other students and potential instructors who are carrying on the work with far reaching results.

I was a subscriber to *Keramic Studio* from its first number, May, 1899, until April, 1930, and for a short time after that. The Robineau touch disappeared after that, however. I had followed Mrs. Robineau throughout this period of over 30 years, and feel as you so ably express in your article what a wonderful person she was, what a power and influence she had been to all those with whom she came in contact and those who became acquainted through her magazine . . .

ALICE M. HAGEN
Nova Scotia

Gentlemen:

. . . was really thrilled with the first issue; it has so many items of interest . . . Your Cover Story interested me especially. I do china painting and about four years ago a friend of mine gave me 15 copies of *Keramic Studio* magazine which Mrs. Robineau published. They were dated as far back as 1904. To me they are priceless, and your Cover Story makes them more valuable, as I had no idea of the publisher's background . . .

IRENE YARBERRY
Irene's Ceramic Studio
Pueblo, Colo.

Gentlemen:

The article about Mrs. Robineau interested me greatly. I have had an artist's education, and make pottery in my spare time . . . I figure the highest I have ever earned is ten cents an hour . . .

(MRS.) LEONARD L. HOHL
Berkeley, Calif.

◆ Mrs. Hohl shouldn't feel disheartened about her earnings. Mrs. Robineau made only about $10,000 in 25 years (approximately 9125 days), or roughly $1 a day—before costs!

More Congratulations

Gentlemen:

Congratulations on your new magazine. We long ago said it was a shame there was no new magazine available for the serious potter, or for those who would like to become one. Your first issue was very good, and the line-up for future issues sounds wonderful.

. . . The trend in stoneware is growing here, and the hobbyist is beginning to get a taste for more simple forms and practical objects. Deliver us from the frilly pieces and give us something to sink our teeth into!

Again congrats, and thanks.

(MRS.) LORRAINE FITZSIMMONS
Kenmore, N. Y.

Gentlemen:

. . . am more than delighted. This magazine answers the needs of teachers and hobbyists beautifully. I have looked for years for just such a magazine and am more than pleased that at last I have it.

TERESE WILLIAMSON
Milwaukee, Wis.

Gentlemen:

CERAMICS MONTHLY is now holding *success* in the palm of its baby hand—As it grows older and larger, it will accumulate many, many "well wishing" friends and admirers such as I— Congratulations.

KATHLYN B. TENHULZEN
Ceramics Without a Name
South Gate, Calif.

Gentlemen:

. . . it is a generous and intelligent answer to a definite need.

(MRS.) JOSEPH E. FARRELL
Troy, Ohio

Gentlemen:

. . . Upon examination of CERAMICS MONTHLY we feel that it is a superior magazine for the use of the public school art teacher. As we have used our subscription funds for this year I am placing the enclosed subscription in my own name, as I feel I will personally benefit from it as well as my fellow teachers.

MARGARET THOMASON
Gay Junior High School
Harlingen, Texas

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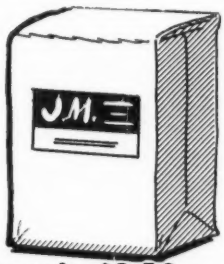

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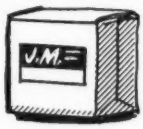

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An Open Letter

The article on Bernard Leach and his associates which appeared in the February issue ("Midwest Craftsmen's Seminar" by E. J. Brownson) is commented on in the following "open letter" from Henry Bollman, a professional potter and owner of the Henry Bollman Potteries, East Gloucester, Mass.—ED.

THE 400 years that lie between Bernard Palissy and myself are less than one second in terms of geologic time; and if you believe in a single Unobstructed Universe, where there is neither time nor space, then he and I are contemporaries.

I suppose it sounds pretty nervy for me, a ceramic nobody, to bracket myself with one of the ceramic greats of all time. But at any rate Palissy and I had one thing in common: we began our potting careers at exactly zero knowledge. We did not worry (as Bernard Leach does) about our "tap roots of cultural support." Palissy had never heard of a Greek vase because it had not yet been excavated by Schlieman, and I did not give a thought to "the Pre-Columbian Indian." Tradition meant exactly nothing to us. All we knew was that we wanted to make pots.

And what did we come up with? Palissy produced what he called "Rustic Pieces," and he called himself "A worker in Clay and Inventor of Rustic Figulines" (small modelings). They were accurate models from life, and included wild animals, reptiles, plants, and other works of nature, combined as ornaments into the texture of the vase or plate.

I, on the other hand, turned out pots which were indigenous to my locale, by the sea. Ships, gulls, and waves appear in my decorations.

My point (I feel compelled to answer Mr. Leach's comments) is that we expressed what we had to express, without reference to tradition. Moreover, we were not tied to the potter's wheel, and limited by the perfect circle.

I have always felt that the potter's wheel is a millstone around the ceramist's neck; holding to that inevitable circle, and preventing him from exploring the infinite variety of the parabolic curves.

MR. LEACH is an inspired writer. He has a deep awareness of ceramic subtleties; and is able to express it at length in his book, which is

(Please turn to Page 30)

FURRY AS A KITTEN'S EAR

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Ceramics MONTHLY

Volume 1, Number 3 — MARCH, 1953

45 cents per copy

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a letter from the editor

Dear Reader

Your response to our initial issues has certainly been gratifying, and we sincerely appreciate the many friendly notes and letters. We have tried to answer all of them; but in case we missed a few, I'd like to thank everyone for the comments and suggestions. The additional features some of you have asked for will be added to our pages as soon as possible.

Incidentally, most of you seemed to have the same "big question" on your mind: "Who may submit manuscripts to 'Ceramics Monthly'?" The answer is "Anyone!"

We have already received many unsolicited manuscripts, and will be delighted to have more. Unfortunately, however, all articles received cannot be published. Each manuscript is carefully evaluated, and is accepted only if thought applicable to this magazine. If it is accepted, the author is paid (upon publication) for his material.

An important point in our judgement is that a paper is evaluated on its merit alone—not on the professional status of the author. It makes no difference whether you are a hobby craftsman, a supplier, or (even) a professional potter. If you send something factual and applicable, you may be assured it will be favorably considered.

So, if you have something to offer our readers, we want to hear from you! And if we can offer you something special—more information on one of your pet subjects, for example—tell us about it. We'll be pleased to have a specialist serve you, whether it requires a short "Vignette" or a feature article.

Yours cordially,

Louis G. Farber

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new & useful

China Decorator's handbook, put out by the W. A. Maurer Co., 316-318 W. Grand Ave., Chicago 10, Ill., runs the gamut from the colors a china decorator may wish to use to enamel and gold decoration. In this 66-page illustrated work are chapters about the equipment needed by the decorator, drawing, tinting, dry dusting, figure painting, and using lustres and mineral transfers. Particularly interesting reading is made of some of the chapters when mention is made of the background of china painting in general and what has been done with certain techniques in other countries.

A handbook supplementary to the one for china decorators is Maurer's "Firing China and Pottery." In it, the ceramist learns of cones, stacking, firing the kiln, and bisque firing. There are also helpful discussions of the errors which can easily occur when firing, such as underfiring, overfiring, getting blisters, black specks, flame burning, and many others.

To obtain these handy books, write to the Maurer company direct.

Underglaze Color use is explained in detail in the free pamphlet currently being offered by the E. P. Mayen Co., P. O. Box 224, North Hollywood, Calif.

In the brochure are explained how to decorate on greenware and bisque; tips on applying the colors; how to do finger painting, sgraffito, and mottling. In addition the ceramist is given information on characteristics of certain of the many colors offered by the firm.

Mayco (as the company is known) has for sale two sample kits, each containing 20 half-ounce jars.

For the pamphlet and additional information, write Mayco direct, mentioning CERAMICS MONTHLY.

"Fleckel", an entirely different glaze with tiny specks of color in it, has just been announced by Pemco Corp., Baltimore 24, Md. The manufacturer claims it is different from other speckled glazes now on the market, because the existing glazes are limited to dark colors or earth tones. Fleckel comes in pink, blue, and blue-green, as well as brown or black.

Of particular interest to the hobby craftsman is the fact that these glazes are already in liquid form and ready for use. The glaze is made up in two series — one maturing at cone 010, the other at cone 06. For additional information inquire at your local supplier or write directly to the manufacturer. Please mention CERAMICS MONTHLY.

Correction. Pemco Corp. informs us that the "Pottery Arts" booklet we recommended in our February New & Useful column went out of print and is no longer available. If this instructive booklet is reprinted, we will inform the readership through this column.

If you have a product or a service you feel will be of interest to the readers of "Ceramics Monthly", send the pertinent information and illustrations (if available) to the attention of the Editor, Ceramics Monthly, 3494 N. High St., Columbus 14, Ohio.

itinerary

address notices of ceramic group meetings and shows to Itinerary Editor, Ceramics Monthly, 3494 N. High St., Columbus, Ohio

WHERE TO SHOW

CONNECTICUT, Norwalk
June 6-July 6

Residents or natives of New England may compete in the Silvermine Guild of Artist.' Fourth All New England Show. Sculpture accepted. Fee is $3; cash prizes given. Entry cards and work due May 18. Contact Chairman Revington Arthur.

KANSAS, Wichita
April 11-May 11

The Eighth National Decorative Arts-Ceramic Exhibition is to be presented by the Wichita Art Association. Closing date for entries is March 10-16.

LOUISIANA, Baton Rouge
April 5-30

All Louisiana students (elementary, high school, college) invited to compete in the Eighth Annual Student Exhibition. Louisiana Art Commission Gallery. All mediums accepted; no fee or cash prizes. Entry cards and work due March 28. For information contact Jay R. Broussard, Director, Louisiana Art Commission, Old State Capitol.

MARYLAND, Hagerstown
April 1-30

Cumberland Valley Artists 21st Annual will take place at the Washington County Museum of Fine Arts. For present and former residents of Cumberland Valley area. All art mediums will be represented. No fee: jury and awards. Send entry cards by March 17; works by March 24.

NEW YORK, New York
April 2-26

The National Academy of Design, 1083 Fifth Ave., will hold the 128th Annual Exhibition for all artists. Mediums include sculpture. A jury will award prizes. Work due March 19.

New York
March 8-22

The National Arts Club of the American Artists Professional League is holding the Grand National Member Art Competition; for members only. Mediums include sculpture. There is a $4 handling charge for each entry. Address inquiries to your chapter president or Chairman, The Grand National, National Arts Club Building, 15 Gramercy Park.

New York
April 12-May 3

Riverside Museum will present the Sixth Annual of Knickerbocker Artists. Mediums include sculpture. Entry fee is $5, and prizes are offered. Entry cards due April 6; work, April 14. For further details contact May Heilooms, 1915 Morris Ave., Bronx 53.

PENNSYLVANIA, Indiana
April 15-May 26

The Annual Art Exhibition of the Indiana State Teachers College will be put on by the Student Cooperative Association. Sculpture will be accepted, and the show is for all artists. The fee is $3.50; purchase and cash prizes will be given. Entry and work due by March 15. Address Dr. Orval Kipp, Art Department Director at the College.

TEXAS, Beaumont
May 3-31

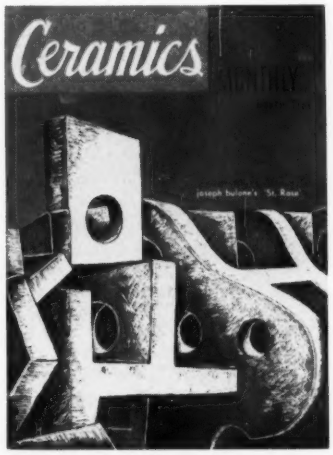
Beaumont Art Museum, 1035 Calder Ave., will present its Second Annual show, and will accept sculpture. Open to Texas, Louisiana, and Mississippi artists. Cost is $5 for two membership entries, $3 each for non-members. Purchase and cash prizes: Applications due April 1; work, April 7.

WHERE TO GO

CALIFORNIA, Claremont
March 17-May 14

The 10th Annual Invitational Ceramic Exhibition of the West Coast will be held on the Scripps College campus.

(Please turn to Page 31)



OUR COVER this month is not a pure abstraction, as you might think. It shows a portion of the internal cellular construction of the St. Rose of Lima sculpture. See Page 14!

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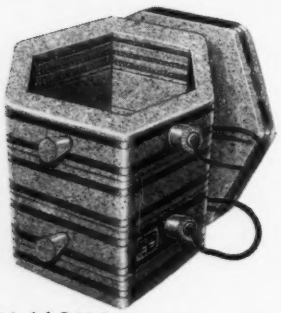

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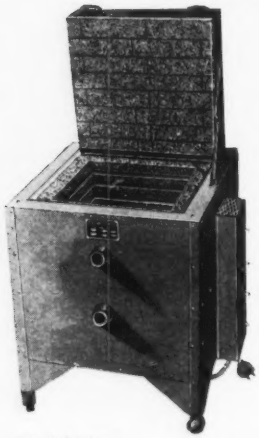

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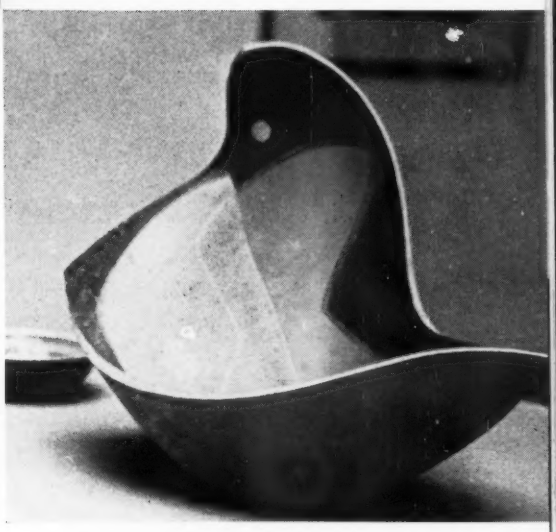
second in a series of articles on free form



free form

by DOROTHY W. PERKINS

FREE FORMS are fun! From the first tentative desire for an experience in free form through the continuing challenge of form study, a very real excitement can overtake the potter. He sees in each successive form new ideas, new approaches. His horizon widens with each form and that horizon includes all forms he may subsequently undertake—be they asymmetric or symmetric.

The stimulation of the mind—the continuing growth of analytical and constructive thought—the challenge of the form problem—all are brought about, although not entirely consciously, in producing free forms. Over all, and possibly the most important single aspect of free form construction is the deep personal pleasure to be experienced.

In an earlier article (CERAMICS MONTHLY, February, 1953) we dwelled on the inspiration that nature offers to the designer of asymmetric forms. Now we will delve into *how* to produce irregular shapes such as those suggested by the forms of nature.

The author is Ceramic Instructor in the Division of Fine Arts of the Rhode Island School of Design, Providence, R. I.

The lines, masses, contours, textures, and general spirit of natural forms may be constantly re-emphasized with advantage as the free form designer approaches and continues his creativity. There are as many approaches to the making of irregular shapes as there are or could be shapes—since every design problem involves the determination of not just "what to do" but "how to go about it." Fortunately there are some basic ways in which such a design problem may be started.

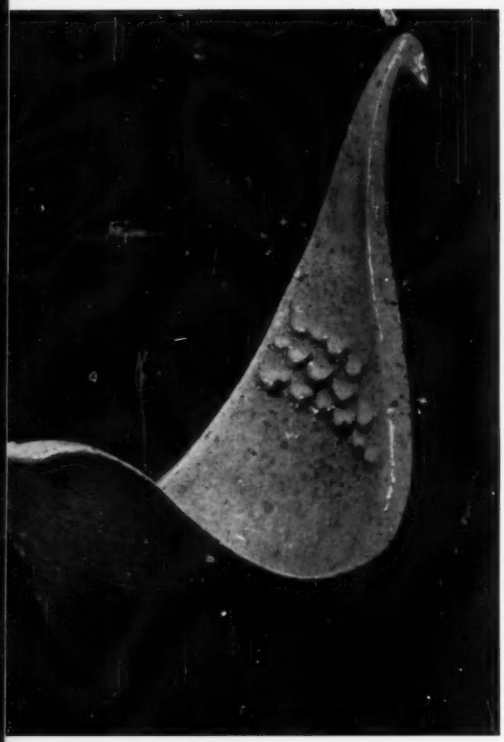
TWO METHODS will be discussed here: pressing clay *into* a plaster form and pressing clay *over* a plaster form.

A starting point for either of these methods may be, once again, the observance of nature's forms. The contours of rocks can help in making a series of sketches such as is shown in the illustration. Sketches of this nature may be rather roughly drawn with a soft pencil or grease crayon. The variations are innumerable and the more sketches made the less complex, and therefore more usable, they should become. Let them evolve with freedom. A rough sketch of this type cannot be "spoiled": if it is not pleasing, it will help to solidify one's ideas for further sketches. The purpose of the sketch is to clarify your mental picture. *It is no more than a suggestion for the three-dimensional development which is to be made in clay.*

If clay is to be pressed into a plaster form or "press mold," it is first necessary to make a partial model from which the mold itself may be made. The partial model or "hump" may be built up of solid clay, working directly on the rough sketch.

The bottom of the hump eventually will be the form of the bottom surface of a piece of ware. It has been flattened so that subsequent pressed pieces will rest evenly on a table surface. It is not advisable to make the bottom of the hump concave, forming a regular foot rim. If done, the corresponding raised portion in the mold may cause the pressed piece to crack as it attempts to shrink in the mold. It is therefore usually better to make the bottom of the hump flat.

A foot may be made on the pressed piece *after* it is removed from the mold. The flattening of the hump may



not be desired, depending on the design of the pressed piece or pieces to be made in the mold. In some cases the bottom of the hump is left rounded, with no flattened portion. This is done if legs, a metal cradle, or some other footing arrangement has been predetermined.

MAKING the plaster mold is a simple matter, and is demonstrated on page 28 of this issue. Particular attention should be payed to the method used for mixing the plaster, as this is an important point. When the mold is completed it may be used immediately for pressing, although a drying period will permit a pressed piece to stiffen more rapidly, and will therefore permit the removal of the piece from the mold in a shorter time. Small lumps of clay may be used in pressing into the mold. The clay being used for the pressing is very soft to permit the thorough working together of the individual lumps. There is less danger of entrapping air or of subsequent cracking due to poor adherence of the pieces of clay to each other if the clay is soft.

It may be noticed that the clay being pressed in is thicker in some portions than in others. The design in mind often dictates such variances in wall thickness. It is sometimes difficult to tell just how thick the wall actually is. In such a case, a needle may be run through to the mold and the thickness thus determined. Small holes made by the needle will be sealed as pressing continues.

After the small pieces of clay have been worked into the mold either a flexible metal or rubber scraper may be used to further compress the clay, simultaneously giving a degree of finish to the surface.

Additions of clay can be made above the top of the press mold. The process of adding clay above the mold may be carried as far as desired. Clay to be added above the mold may be in the form of coils, slabs, or small pieces. As clay is added it is worked thoroughly onto and into the basic form and successive additions are welded firmly together.

A frequent difficulty arises when additional portions are made too thin. It is easier to build the additions a bit heavier than desired. They will be thinned sufficiently during finishing. It is well to make additions while the form is stiffening in the mold. It is obvious that if the form were removed from the mold too soon it would slump.

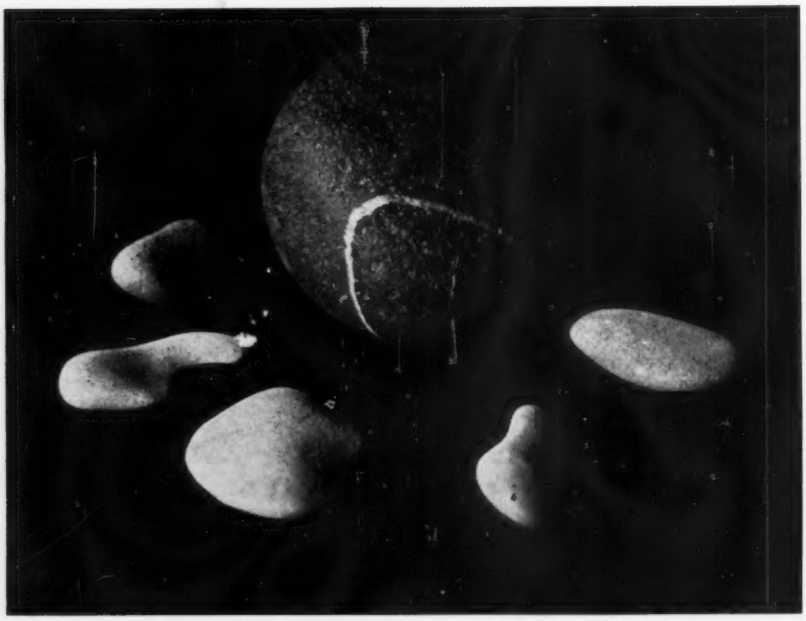
Upon removal of a pressed piece from the mold, it is necessary to work over the back surface, filling in any small crevices resulting from the pressing in of the clay pieces. With a good pressing clay it is also possible, despite the comparative stiffness and dryness of the form, to add (or subtract) portions as desired.

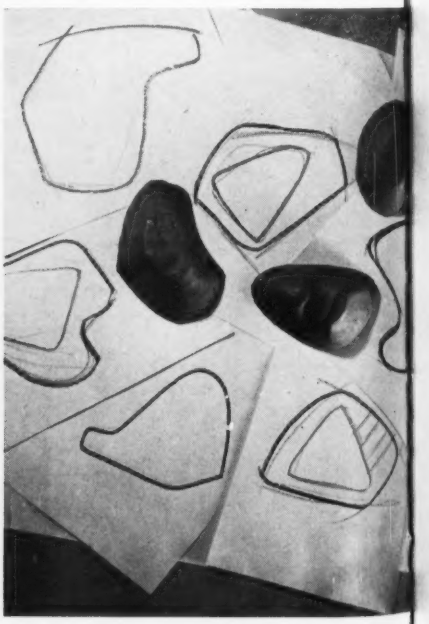
AN ASYMMETRIC form is usually more pleasing when it has a certain "lift" from the table surface. Such a lift is not merely that given by added legs which do, literally, lift it off the table surface, but may be engendered by the lines of the form itself. The quality of lift may often be increased in pieces which have flat bottoms by making the base smaller

The photograph on Page 9 (top left) shows two form studies for a charcoal brazier by John Cipot, as are those on Page 12. Other finished forms in this article are by Warren Maxfield.

YOUR SKETCHES should evolve with freedom. Remember, they are nothing more than suggestions for the three-dimensional developments which are to be made in clay.

CONTOURS of rocks can help in making a series of sketches . . .





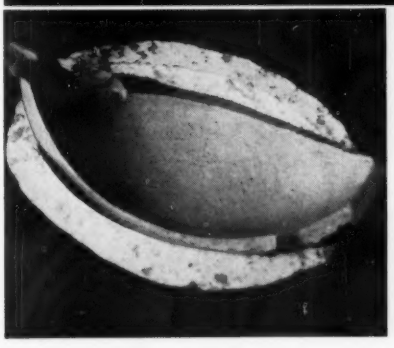
than would appear plausible at first thought. This permits a better flow of line from the base to the upper portions of the form. A feeling of "growth" may be given to the piece in this way. Stability of the form must not, of course, be destroyed by making the base *too* small. The clumsiness which often destroys the over-all effectiveness of a free form is frequently caused by an overly large base. When the base is too heavy it is difficult to achieve the desired lift in the form.

The top edge of a form is likewise an important factor in establishing the lift of the form. Its contrast of thicknesses, as well as of its directional planes, its rise and fall may do much to make the form heavy and clumsy if not handled decisively. A frequent tendency is toward a rubbery appearance in the rim which renders the form flabby and unconvincing. A crisp statement in this area is most desirable.

A second method of pressing clay is *over* a plaster form. When this method is used the plaster form or "hump" forms the *inside* surface of the pressed piece. Humps may be made directly in plaster in the manner explained. Here again, the slow mix of plaster provides an advantage by making the plaster workable over a longer period of time. The hump may be given its desired form with a flexible scraper. If the plaster hardens before the form has been refined as desired, rasps, and coarse and fine sandpaper may be used to finish it. Sandpaper which may be used with water is preferable to that which must be used dry since it is cleansed by dipping in water.

The plaster form may or may not be dried before use in pressing. If it is not dried, however, it is helpful to place a piece of cheesecloth over it before pressing. This will aid in the removal of the pressed piece from the wet plaster hump.

One method of placing clay *over* a plaster form is with a flattened sheet of clay, the excess clay then being



SOFT CLAY pressed into a mold, a small piece at a time, is one of the simplest ways to start free forms. Soft clay permits thorough working together of the small lumps and keeps air from becoming entrapped. To tell exactly how thick the wall of clay is, run a needle through to the mold.

Simple shapes like those shown above as well as more complex ones (see pictures on opposite page and below) can evolve from the same press mold. Clay can be added above the top of the mold; the sides of the piece can be cut below the mold, as shown at right.

PRESSING over a plaster hump is another simple method. Here you start with a slab of clay laid over the mold, or small lumps. A flexible scraper will aid in smoothing the surface, and a paddle will give you a flat base. After removing the piece from the mold, the palette knife can be used to develop an interesting shape . . .

trimmed off around the hump. A second method is with small pieces, just as was done in the press mold. Here again the clay should be soft for easiest working, and again the needle may be used to judge the thickness. The flexible scraper presses the pieces of clay together while smoothing the surface. The bottom of the piece can then be paddled to make a firm base.

This method of making forms—over a plaster hump—could be used with advantage if legs or some such footing arrangement were desired, since legs could be added at this stage.

After removing the piece from the mold the top edge of the form may be cut down if desired. Clay additions to the form may also be made at this time.

While the forms being demonstrated are fairly open, they also may be carried upward. Although the forms shown here are varied, each may well have been started in the *same* press mold, indicating the limitless possibilities offered by a single mold. *A mold may be used for many forms. It is not necessary to make a new press mold for each pressed piece desired.*

. . . and clay additions can be added as shown at left. Pressing over a plaster hump can be used to particular advantage if legs are desired, since they can be added while the piece is still draped over the mold.

WHEN MAY work on a free form be termed "completed" or "finished"? To state exactly would be presumptive on the part of any person other than the creator of that form. In a very general sense it could perhaps be said that when the form pleases the creator, in the proportions of its masses and planes, in its transitions, in the relationships of all its aspects—with due regard for any further treatment before or after firing—then that particular study in form has been completed. The best, and perhaps the only, qualified critic of a particular form is the person who made the form. During the making of the shape his self-criticism was an ever-present and controlling factor in the evolution of the form. It is only in terms of his own experience with forms that he himself can criticize it. The more forms undertaken, the greater will be the understanding of asymmetric form. Each piece is a new experiment and valuable as experience. ●

Delayed Crazing

by EDGAR LITTLEFIELD

THE CORRECTION of ordinary crazing as discussed in a previous article [CERAMICS MONTHLY, February] is usually not overly difficult. And, the potter, having solved that problem, may easily allow himself to relax in a bed of smug security, insofar as crazing is concerned. However, it is possible that he is due to be rudely awakened. One fine day, when examining pots made several weeks or months previously, he may discover that his old enemy, crazing, has returned.

It is a cruel blow. The glazes that were not crazed when removed from the kiln and which were still uncrazed a week later are now marked by unsightly craze lines. He is the victim of *delayed* crazing, a defect of particular perfidy, since it makes its appearance a long time after the ware's removal from the kiln. The delay may be a matter of weeks or months or years.

There are two main causes of delayed crazing. The most important of these is re-expansion of the clay body after firing. Although clays contain many impurities of various kinds, the basic clay molecule is a combination of molecules of silica, alumina, and water. *The molecules of water are chemically combined with the molecules of silica and alumina, and are present even after the clay has been dried.* This water can be expelled only by temperatures approaching a red heat and is, therefore, not to be confused with the water of plasticity, which is present in moist or plastic clay and which can be removed by ordinary drying.

When a piece of clay is fired to at least a red heat it shrinks. Part of the shrinkage is due to the expulsion of the chemically-combined water from the clay molecule. If the firing temperature has been so low that actual vitrification of the clay has not begun, or has been only partial, then the clay molecule is able, over a period of time, to take back into itself at least a part of the water it lost in the firing process. When this happens the clay expands slightly, seeking to return to the unshrunken condition it had prior to firing. The time required for this expansion to occur depends chiefly upon the amount of moisture available and upon the degree of vitrification of the clay.

If the piece of fired clay bears a coating of glaze, the glaze may be uncrazed after firing and may remain so for a considerable period of time. However, when the under-fired clay molecule begins to rebuild itself by taking back its expelled water, the inevitable expansion will cause the glaze to be too small for the clay it covers and it will be subjected to tensile stress (stretching). Crazing will result.

Delayed crazing resulting from the expansion of the clay body is quite common and is a source of annoyance to studio- or hobby-potter and industrial producer alike. Naturally, it is also a great and valid reason for disappointment to the purchaser who may find that the ware he thought so attractive several months ago is now marred by crazing.

ONE may ask how moisture can penetrate a glaze to cause expansion of the clay body. The answer is that no glaze covering is so perfect that it is impervious to the passage of water. Dinnerware glazes bear small breaks marking the points of contact with the pins or stilts which supported the ware in the kiln. Even if these small ruptures were not present, there would remain in the glaze surface tiny pinholes, often too small to be seen by the unaided eye, but amply large for the ultimate penetration of moisture.

If the ware is of a kind seldom in contact with water, such as ceramic sculpture, the appearance of crazing may be delayed for years because the only moisture available is that in the atmosphere. A piece of dinnerware subjected to daily washing may develop crazing in a few weeks or less.

For this type of delayed crazing, the remedy obviously is to fire the ware sufficiently, vitrifying the clay molecule and changing its character so that it is no longer "thirsty" for the water expelled from it. It is common industrial practice to take the further precaution of so constituting the glaze that it has a coefficient of expansion slightly less than that of the clay body on which it is used. This means that the glaze, immediately after firing, will be slightly too large for the body and will, therefore, be in a state of compression. Then, if there is any tendency for the body to expand, the glaze will be able to accomodate the expansion.

ANOTHER CAUSE of delayed crazing is slight tensile stress which has been present in the glaze from the beginning but not of sufficient magnitude to cause immediate rupture of the glaze. This is associated with the relative coefficients of expansion of body and glaze, and is therefore really due to the same factors involved in ordinary crazing.

All substances, inorganic as well as organic, are subject to fatigue under long-continued stress. Engineers recognize this fact in structural design. The girders in a steel bridge, for example, are made much heavier than they would need be if the weight of the bridge and its probable maximum load were all that required consideration, because it is known that steel grows

(Please turn to Page 30)

Mr. Littlefield is Professor of Ceramic Art at Ohio State University, Columbus, Ohio.

COVER STORY

'ST. ROSE OF LIMA'

watching the artist create this interesting sculptural and engineering accomplishment

ST. ROSE of Lima was my first commission—one that had been attempted by at least two other artists. So it was with a genuine inner quaking that I agreed to create the statue of the patron saint of the St. Rose of Lima parish in Houston, Texas, to complement the new church and school being built there.

And since it was my first major artistic venture, I was particularly excited about meeting the wishes of the architect and the pastor of the church, and at the same time expressing an idea to the public.

As an artist on commission must, I had to give some thought to how the architectural setting and the subject matter would affect the final piece (which I began to conceive in my mind's eye). There were the matters to consider of what material to use, what color to make the figure, how the building would affect the statue design, what pose the St. Rose should take, what size to make it.

Other physical matters had to be considered, too, such as the fact that St. Rose was to be on a fixed pedestal, so wide, so high; the view; the course of the sun; and the elements.

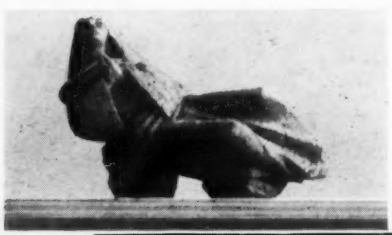
The question of material selection was resolved when I received at the Cranbrook Academy of Art in Bloomfield Hills, Mich. (where I was to do the St. Rose statue), the following note from the architect, Donald Barthelme:

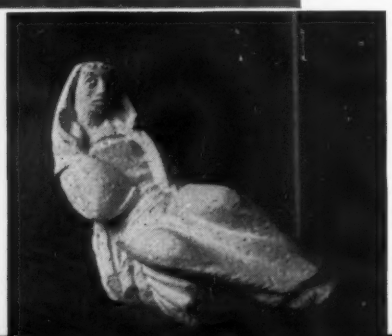
"We feel that terra cotta should be used, primarily because it coincides exactly with our concept for the building. We want the entire project to be unostentatious and unassuming, and to let any values evolve through their own merits rather than because of the connotations of materials . . ."

The final figure was to be a terra cotta of red, which was specified to relate to the colors of the surrounding walls.

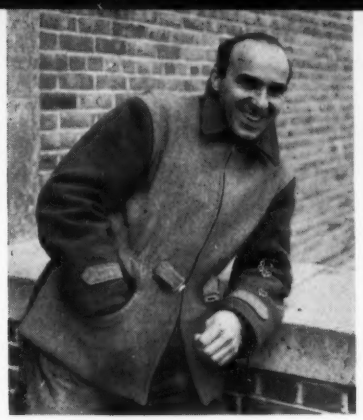
I was told the statue should be a reclining one; and in it, to try to capture a line movement similar to the roof curvings above.

Next, a perforated base that would simulate the two beds of rocks upon which the Saint would recline was suggested. A solid base would have been safer and easier to work with in clay—a matter requiring a great deal of





"I MADE numerous clay models in miniature, and sent photographs of the two most interesting ones to Houston. The model at top left was selected by the architect and the parish priest."



by JOSEPH BULONE

consideration because of the size of the statue, which was to be 2½ by 3½ by 5½ feet, or approximately a little over life size. In the end result, however, it seemed to me the perforated base had a definite advantage. It put more emphasis on the figure itself and made the mass supporting it less important. There seemed, with the perforated base, to be a third-dimensional quality present. For not only was an object created in space, but also space within an object; just as a tree is in space, yet has space in itself, between the branches.

The picture at Houston (where I had never been) was important to me, for I knew the figure of St. Rose had to fit in with the new church and school as conceived by the architect and Father Paul C. Pieri, and because of the background of the Saint herself. In line with this, the bed of rocks the figure of St. Rose reclines upon signifies the acts of penance she did in her lifetime.

BEFORE beginning the actual construction of St. Rose, I made a thorough study of the Saint's life. I learned that she was born in Lima, Peru, on April 20, 1586. In her youth she took the vows of virginity and complete abstinence from meat. Because of the acts of penance she performed during her relatively short life she is known as one of the great penitent saints. She died at the age of 31 in 1617, and was canonized a saint in 1677.

Now came countless hours of sketching on paper. From the drawings were conceived ideas for numerous clay models in miniature. The models were kept small and general in concept so that I could conceive the whole and not become distracted by details. I strove for variation in volume arrangement and movement.

Selecting two of the most interesting models and having photographs made of each, I sent them to the architect, who in turn consulted with the parish priest. The two were returned with suggested changes, likes and dislikes, and numerous other comments, but—of greatest importance—an approval!

The first problem I broached was whether or not to glaze. After much experimenting, I decided against it.

"I DECIDED on the slab technique and used a cellular internal construction. The piece was built on a wooden slab on which I had spread several sheets of paper and a sheet of plastic, to allow free movement as the piece shrank."

Mr. Bulone is a designer for the General Motors Corp., and resides in Birmingham, Mich.

"I WEDGED the clay, cut it into slices and rolled them to a desired thickness."

"THE SLABS were used to build the interior walls, also as the covering layer."

"THEY were joined on the surface by scoring deeply and knitting together."

"I perforated almost all the cell walls to insure safe drying and firing."

Although a glaze would have given the piece more durability against weathering, the inherent temperature variations common to all kilns would become quite apparent. On a glazed experimental model the head end fired light in color and the foot dark, which showed the uncertainty which would surround the outcome of a glaze on a much larger piece.

Also, because of the inevitable handling of the weighty (approximately 890 pounds) final piece, I found it would prove impractical to apply a glaze to the statue even at the last minute before placing it in the kiln. Much handling was to be necessary because St. Rose was to be transported from my studio at Cranbrook to the kiln at Pewabic Pottery in Detroit, 20 miles away. There, it would take many hands to lift it in for firing.

THE GLAZING problem resolved, then, and the question of building methods replaced it. After experimenting with various methods of terra cotta construction, I decided on the slab technique, using a cellular internal construction. The size of the statue, its reclining attitude, transportation, and handling made utilizing the coil method, the solid building and hollowing method, etc., impractical.

Slab building, on the other hand, embodied many desirable qualities. It combined high strength with a minimum of weight, negligible warpage, uniform shrinkage, and high crack resistance.

Prior to starting the final piece, I had in readiness a platform measuring two by five feet, composed of a three-quarter inch plywood board braced underneath by two-by-fours. Over the platform were spread several sheets of newspaper covered by a plastic sheet. This was done to allow the piece free movement as it shrank toward its general center.

As with all clay building, wedging was an important step. Here I worked to achieve a desired workable consistency, to break up large pieces of grog and to remove air pockets.

After the clay was wedged, I cut it into slices about an inch thick and rolled them to a desired thickness by using two three-quarter inch boards and a rolling pin. The slabs were placed in a damp box, ready for use when I had need of them.

And I had need of them in short order, for the time to begin the actual building was at hand. I established the two rock formations that the statue was to recline on, and bridged across. Odds and ends of wood were used to support the bridging section until I felt the bracing and binding above were sufficient to keep it from sagging.

Slabs were joined by scoring both surfaces deeply, spraying very lightly with water, and then using a modeling tool to firmly knit the two sections together.

Since a good circulation of air was mandatory to insure safe drying and firing, I perforated almost every interior cell wall. A minor asset of doing so was to slightly lessen the weight. In no instance did I find weakening of any portion of the statue from the perforations.

As the interior construction progressed, I applied the cover layer. When there was sufficient coverage I started

to develop the form, scraping where there was too much and building where needed.

When I had completely covered the interior construction, I opened holes in various places in the covering layer to keep up circulation of air in the interior. During this late stage I continued development of the form and finished as I went along.

The statue was nearing completion, but I found I had to make several changes which called for rearrangement of the interior construction. These occurred in the head, hands, and sleeves.

"STRINGS were secured to the secondary model as reference points for building the finished piece to scale. Here you see the objectional features that were corrected in the final piece; that is, the position of the head, hands, and sleeves."

I BROUGHT the head forward and down, for one thing, creating more interest at this important focal point. With the head slanted back and gazing skyward, the onlooker was confronted with the undersides of the eyes, nose, lips, chin, and a stretched neck.

Due to the change in size, the hands and sleeve areas of the secondary model would not work in the final piece. The hands were changed from a closed praying attitude to that of a slight separation. In the closed position the hands seemed gross. A simple breaking of this large mass into two smaller ones created a more interesting relationship to surrounding forms.

Sandals were added to the feet, thickening and making this protruding group stronger.

To close the holes I had opened to aid in drying the interior, I dampened each and its surrounding area by inserting a moist cloth. I then inserted a clay plug, working it much the same as I did a patch.

Finally, after a month of steady work, approximately 11 hours a day, the statue was completed. During the following month, I kept it uncovered a little longer each day until it was able to stand complete exposure. Toward the end, to insure bone dryness, I used heat lamps, being careful not to let them stand in one place too long.

Since I was doing the St. Rose indoors, and since the dimensions were to be as large as the doors to my studio would permit, I had done some careful shrinkage calculations on the clay I was using. The statue was wider than the doorways initially, but I had sized it carefully and knew it would clear the doorways easily after shrinkage. I had no wish to find myself in the position of the man who built a boat in his basement only to find it too big for the doors when the time came for launching!

The time came to transport the statue to the kiln at the Pewabic Pottery. With the help of six husky recruits, it was eased through the doors and lifted into a truck. An hour later it was painstakingly placed in the kiln. The kiln was large enough to allow two of us to pull from the inside while the others pushed. Three days later we lifted the fired piece out.

Only two incidental cracks were found. They were filled previous to sealing with a ceramic cement, matched as closely as possible to the color of the piece. The statue retained its kiln heat long enough to allow several of us to apply three coats of waterproofing, which did not affect the color.

"I OPENED holes in the 'skin' to aid in drying the interior and closed them with clay plugs."

THE completed statue was quickly crated. As the last crating sections were being put in place, I paused long enough to afix a medal of St. Christopher (parton saint of travel) about the neck of St. Rose. Three weeks later the statue arrived safely at the church in Houston, and was anchored on the pedestal, where St. Rose may now be seen.

And I back in Bloomfield Hills was feeling satisfied, and grateful to William McVey, my instructor at Cranbrook, and to many others of the faculty and student body, who helped make St. Rose a reality.

Naturally, I was a little relieved too—as a person is who has just finished his first solo flight. All the problems that presented themselves had been a challenge to me—and what is more wonderful than the feeling one gets when he complies with limitations, yet overcomes them? ●

We're pleased to present . . .

. . . a few members of our family—working members! We introduced one, Advisory Editor Dick Petterson, in January when he was the subject of our Profile. Now we want you to meet Advisory Editors Littlefield and Carey, who not only give advise but do—and will do—a good deal of writing for the monthly issues. This month it is a pleasure to add two new names to the masthead, Contributing Editors Dorothy Perkins and Ken Smith. Dorothy will keep you interested, we're sure, with her articles on free form, a subject she intends to continue exploring. Ken has agreed to take over our monthly "Answers to Questions" column. And all are well qualified, too. See for yourselves!

J. Sheldon Carey was once the subject of an article entitled "American Craftsmen Are Proving Everyday Objects Can Be Fine Art." Such is one of the goals he had hoped to attain as a teacher and a craftsman. Sheldon received his B.S. in ceramic art at Alfred; and a master's at Teachers College, Columbia University. Following his graduation from the latter institution he taught there for two years (1940-42) as a ceramic art teacher. Later he taught at the Rhode Island School of Design before he took his present post at the University of Kansas, where he is head of the Ceramic Division of the Design Department. Sheldon is particularly interested in creating new and exciting shapes on the potter's wheel. He promises to "show" the readers of CERAMICS MONTHLY some of his innovations.

Edgar Littlefield's long list of prizes in America's ceramic art exhibitions includes two first prizes in the Ceramic National Exhibition and a purchase prize in the Exhibition of Ceramics of the Western Hemisphere. He has attained many honors and awards at local exhibitions in and around Columbus, Ohio, too, where he is Professor of Ceramic Art at Ohio State University. Ed started his ceramic art career with a degree in ceramic engineering from O.S.U. in 1928. On the experience side of the picture, he has served as consultant for various potters' groups, has operated a private pottery, and for a time was employed as both ceramic engineer and designer for a manufacturer of artware. Glazes are his specialty.

"America's Most Interesting City," New Orleans, claimed Ken Smith when he was graduated in 1929 from Alfred University. He took a teaching position at New Orleans' Newcomb College, Tulane University, and remained to become head of the Ceramic Art Department. He received his master of fine arts from Ohio State University in 1939. The summers of 1939-41 he conducted the ceramic program at the YMCA Graduate School, Blue Ridge, N. C. Then he was visiting professor of ceramics at Escuela Nacional de Bellas Artes, Tegucigalpa, Honduras, 1945-46. Even his present position (begun in 1946) as Manager of the Ceramic Division at the American Art Clay Co. demands that he spend part of his time lecturing at the John Herron Art School-Amaco summer workshop.

Dorothy W. Perkins is part of a well-known team, namely Mr. and Mrs. Lyle Perkins. The two are teachers as well as ceramists, but as Dorothy wrote us recently, they "are always concerned that the teaching shall receive primary attention." That wish is perhaps responsible for the enthusiasm that she has packed into her teaching (via the written word) on free form. She was graduated from Alfred University in 1939 with a bachelor of fine arts degree in industrial ceramic design. Shortly after, by way of a scholarship, she took a master's in fine arts at Ohio State University. Now a ceramic instructor at the Rhode Island School of Design, she and Lyle are working summers at Ohio State toward a Ph.D. in fine arts.

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vignettes

CLAY in its purest form would be almost useless to the potter. Its plasticity would be so low it would be quite unworkable. Its vitrification point would be so high that it would require a firing temperature far above practical limits.

The presence of colloidal (minute particles) organic matter is responsible for much of the plasticity of clay. The fact that most clays will vitrify at practical temperatures results from the presence of small percentages of such "impurities" as mica, feldspar, lime, magnesia, iron, and other minerals.

REDUCTION FIRING in electric kilns is easily achieved, and the reducing atmosphere will not be harmful to the kiln. Most electrical heating elements fail because they have oxidized (a process similar to the rusting of iron). Reduction is the opposite of oxidation, so if the amount of oxygen in the kiln atmosphere is reduced, the rate of oxidation should decrease.

One of the best ways to achieve a reducing condition in the kiln is to use moth balls. Since moth balls are nearly all the same size, the exact amount to add over various periods of time can be predetermined through experiments, giving accurate control of the kiln atmosphere.

TRY plastic refrigerator bags and pieces of plastic material for storing clay in the moist state or for wrapping unfinished clay work to retard drying.

UNDERGLAZE colors are intended for decorating ware before it is glazed, a coating of transparent glaze being then applied and fired over all. OVERGLAZE colors are employed for supplying decoration to a fired glaze surface. The piece is then fired a second time, but to a relatively low temperature, in order to melt the overglaze and make it adhere.

EXPLOSIONS of ware in the kiln are most often caused by the presence of water in the clay. This may happen even though the ware has been well dried, because mere drying does not expel the chemically combined water which is part of the clay molecule. Sometimes air bubbles in the piece cause the difficulty, but they are not the big offenders, as one often is led to believe. To avoid explosions in your ware take the following precautions: be sure the ware is dry before being placed in the kiln; increase temperature slowly until a dull red heat is reached, thus giving the chemically combined water a chance to be driven off slowly; avoid heavy cross-sections of clay in your ware, unless you are willing to fire very slowly; and wedge the clay carefully.

GROG is made from fired clay that has been formed or ground to varying sizes of grain. It is generally made from ground-up firebrick but also may be made from broken bisque, building brick or any fired clay, and is used to add color and texture to a ceramic piece when mixed with a clay body. Grog is a non-plastic and non-fusible addition and generally constitutes 20 to 30 per cent of the total body. It tends to make any body more "open," which will allow thick walled pieces to dry and fire safely.

The Potter's Production Problems

by T. A. RANDALL

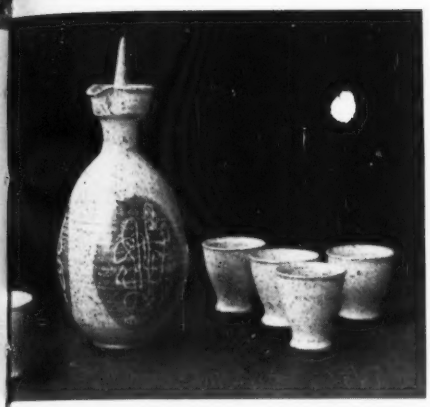
TO SELL their ware, designers in most fields often have to make quite a few compromises between what people want and what they think people should have. Today the studio potter is fortunate because his market's demands are more or less parallel with his own natural design directions. The compromises he must make are small ones, in the nature of concessions to personal preferences, which he can grant with good conscience.

The potter is asked primarily to supply some aesthetic value not found in industrial pottery or to satisfy some need perhaps actually created by industrial design. In industrial pottery the logic and economy of design commanded by production processes leave a small but appreciable hole to be filled by humor, imagination, spontaneity, whimsy, irregularity, or some sign of humanness, in whatever of the infinite variety of forms may be expressed.

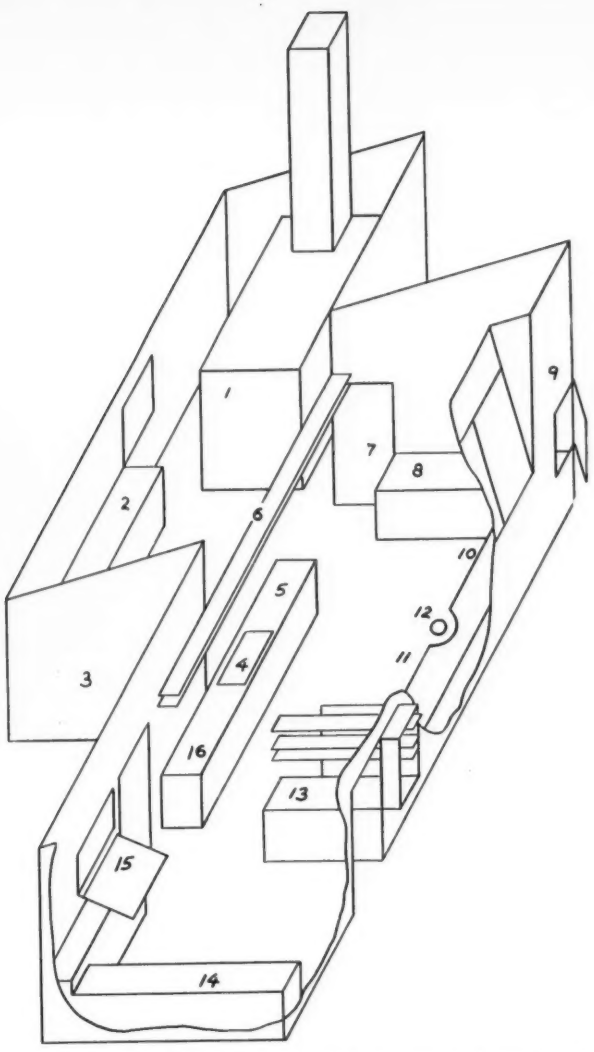
Now, the studio pot is necessarily costly. To offset the price the potter must somehow make the essentially human value financially worthwhile to as many people as possible. He need not necessarily make his pots look expensive. That way lies madness. Rather, he is obligated to provide an equilibrium of form, function, and production seldom granted to industrial design. Perhaps all he has to do is make the best pots he knows how and hope that since he himself is more or less human some of him will rub off on them.

Unhappily, the happy coincident of market demands and natural inclination carry with them a hidden "joker" all too easily missed by the unsuspecting potter. The characteristic aesthetic value asked of him implies a rather critical expenditure of personal time.

IN fact, time is the main ingredient of his cost price. The raw materials of his clays and glazes are "dirt cheap,"



STONEWARE by potter Randall on which he has tried to preserve the "human touch." His ware is fired in the large gas kiln (above left) which he built himself.



LAYOUT of the Randall Pottery which the author designed and built (pictured at lower left). 1. car kiln; 2. storage; 3. clay preparation; 4. sink; 5. plaster; 6. drying racks; 7. dump yard; 8. work bench; 9. spray booth; 10. glazing; 11. pressing; 12. kick wheel; 13. Packaging; 14. correspondence; 15. design; 16. experiment.

reckoned in pennies per pound. He can operate easily with a minimum of equipment probably totaling something less than $1,000.

He can fire between $400 and $600 worth of ware for less than $4. His shipping and insurance fees are absorbed in the retail markup. The paper work of his business is costly only in the personal time it consumes. There is nothing about the profession that necessitates an expensive overhead or front.

Though his greatest expense, time is also the principal value of his ware in both an aesthetic and financial sense. His buyers ask for the pot with the "human touch" — and that is the pot that requires a good deal of human attention. So it is difficult to economize without also deflating the intrinsic and definitive value of his ware.

But there are only 24 hours in a day, and economize the potter must. Perhaps he can at least approach economy by these methods:

1. Conservation of energy by properly organizing his shop.

The very number and diversity of chores attending his profession pose some very neat architectural problems as to their organization in space. Good light; labor-saving devices; and easy access to tools, machinery, and materials are just as vital to the one-man producer as to the industrial plant.

2. The way he apportions the time given to the various activities of his work schedule.

The potter must arrange his work schedule so as to gain the maximum of concentration on the formation, decoration, and glazing of his ware. (If he can compress formation and decoration, or decoration and glazing into one step, then he is that much ahead.) He must expend the minimum of time on the rest of his multitudinous chores. With the aid of machinery he can accomplish several of the more menial tasks within one given time period.

3. Limitations on time, energy, and content of ware design.

Really, the potter's time problem ultimately centers itself and is resolved in his design concepts, in the purposes and limits he sets for himself and his ware. He is wise to call upon the machine for the muscle work, but if he uses it in the design and formation of ware it is apt to dissolve the "human touch."

Probably the potter's challenge is simply to develop the skills and design techniques that give the most spontaneity, directness, and the vitality of movement in formation, and commit him to the least in time-consuming complexity. The "human touch," in his case, is best when it is quick, sure, and true. ●

WILLIAM DE MORGAN

by HENRY BOLLMAN

this 19th Century Englishman, though an eccentric in business, was a fine potter and novelist. first article in a series

IT SEEMS hardly believable that during the last 4,000 years of ceramic history only two potters have emerged who can be called highly articulate. The first is Bernard Palissy, the French potter-philosopher of the 16th Century; the second, William Frend De Morgan, the English potter-novelist of the 19th Century.

Those two great men are, so far as I can discover after much research, the only ceramists among the countless thousands that have preceded them who have been preeminent in both ceramics and other fields, and who at the same time expressed themselves at length in book form.

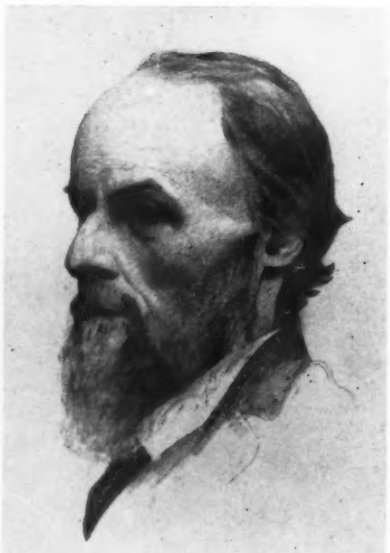
To be sure, every potter worth his salt has written at least one book on his craft. In the Boston Public Library a few years ago, there were upwards of 1,000 volumes written of, by, and for potters, in many tongues, both Oriental and Occidental.

Since this writer is a potter first and a scholar not at all, he was unable to judge the contents of the books written in Sanscrit, Arabic, Japanese, Chinese, Hebrew, Russian, and Polish, because his knowledge of the languages is abysmal. Moreover, his knowledge of the more familiar European languages hardly can be called adequate.

But even the most cursory examination of this immense and comprehensive collection of books, covering ceramic history since the beginning, made it evident that Palissy and De Morgan are unique in the scope and amount of their writings.

Though it would be interesting and instructive to consider and compare these two ceramists, that, as Kipling said so tantalizingly, is another story. Let us examine only the life of William De Morgan.

The author is a professional potter, owning and operating the Henry Bollman Potteries, Inc., Gloucester, Mass.



William De Morgan (1839-1917)

Copyright National Portrait Gallery, London

Speaking as a practical potter, I got a great amount of inspiration from my study of De Morgan's life. He experienced on an epic scale all the sufferings, triumphs, hopes, ambitions, and failures which every potter endures. But where the average potter working in a small studio is having his troubles with relatively small batches of uncooperative glazes or recalcitrant clays, De Morgan gambled for high stakes. He had thousands of dollars invested, and great amounts of materials, fired in large kilns.

One has but to read his credo to understand at once the nature of the man, and his approach to ceramics. He wrote (and every potter ought to paste this passage in his hat):

". . . it is the best thing on Earth, that incessant struggle. Art is more important than you think. But it must be earnest, grim, life-earnestness, that has no tincture of gain in it, or love of earth-fame. Only the strength of one's arm and the whole power of one's being is to be given to it, and to look neither to the right nor to the left, but go straight on doing the best that is in one."

This high ideal admitted no compromise. It meant that when Art and Commerce collided in his career, Commerce came off defeated and Art triumphed. But it also meant that Commerce could gloat with glee at the

inevitable financial failure of the artistic success. And Commerce had plenty of chances to do a lot of gloating in De Morgan's 40 years as a potter.

WHY, then, is he important in the history of pottery?

The key, perhaps, is in the words on the memorial tablet erected to him in a famous old church in the Chelsea section of London, where he lived and worked:

To the Memory of
WILLIAM FREND DE MORGAN
Born 16th November 1839
Died 15th January 1917

Who did much of his best work in Cheyne Row, the Vale and Church St., Chelsea,

Re-creating in Ceramic work upon his own vigorous designs the colour of the Persian and the lustre of the great Umbrian craftsmen.

Enriching literature by his faithful and sympathetic presentment of homely and very human character,

And beloved by all who knew his breadth of intellectual interest, his catholic sympathy, genial humour and lambent wit,

THIS TABLET IS DEDICATED BY SOME OF HIS CHELSEA AND PERSONAL FRIENDS

Although De Morgan repudiated the idea that the art of reproducing old lustre ware was extinct until he revived it, opinion unhesitatingly attributes its recrudescence to his efforts, as was also the revival of the beautiful old Persian ware, with its wonderful blues and greens, so vivid in hue that they pale all colors with which they come into contact. Still more is the fact now being accepted that he was the greatest ceramic artist that England has produced, not excepting Wedgwood, who in some technical details and, above all, in mastery of design failed to attain the high level reached by De Morgan.

"I believe," said De Morgan, "we have learnt all there is to know of the chemical and mechanical side of the art, as it was known to the ancients. What remains to be discovered, in order to produce original work, equal to that of the Renaissance, is not the technical mystery, but the secret of the spirit which animated the 15th Century not only in Italy, but all through Europe. We have got the materials and many more, but the same causes that forbid the attainment of the new beauty have stood between us and the revival of the old beauty . . . some day there may be a *new imagery*, and a *new art*."

Unfortunately his genius did not extend to business and finance. To run an experimental business, such as he was doing, with no substratum of capital, was to live perpetually on the brink of the precipice. With his absence of any commercial instinct, it is surprising that he succeeded at all in keeping disaster at bay for some 40 years. He said of his factory: "It is not well organized; it is very ill *de-morganized* in fact."

His handling of customers is illustrated by the following incident. One day a millionaire arrived at the showroom, full of anxiety to choose a handsome pot, the more expensive the better. De Morgan wandered 'round with the would-be purchaser.

Then he asked, "What do you want it for?"

"I want it for a wedding gift."

"Is it for so-and-so's wedding?" De Morgan asked.

"Yes," came the rejoinder.

"Oh, my dear chap," exclaimed the potter. "Don't give the bride any more of my pots. She is inundated with them already. You take my advice; go choose her a nice, useful piece of silver. She'll like it ever so much better."

The prospective customer, amazed, thanked De Morgan for his interested suggestion and hurried off to the silversmiths.

On another occasion, a man came to give a large order for some tiles with zoological designs.

"What do you want them for?" asked De Morgan.

"It is to tile my nursery," was the reply. "They would be washable and clean."

"Oh, if that is what you want them for," said De Morgan, "do let me advise you. My tiles would come expensive, and they chip easily. Just you go to Minton; he provides nice, cheap tiles, quite good enough for your purposes; and it would save you no end of money."

De Morgan had vast patience in pursuit of an artistic goal, but none in practical matters. For instance, when he moved his factory from Chelsea to Merton, one of his friends relates:

"It was a strange sight. He was always slapdash in those days, and couldn't stand the bother of packing. He just sat in a chair, and put a hammer through dishes worth two or three pounds each, at the same time saying, 'Go on, boys, help yourselves' . . . which you may be sure we did."

An employee writes: "When he pulled the kiln down to go to Merton, bothered if he didn't give all his bricks, especially the firebricks, to the borough of Chelsea; and actually paid the cartage, when he must have known he would need them badly at Merton.

"When I arrived at Merton, I found he had built his kiln in and on the ground, right in the center of the building; the chimney shaft right over the center of the kiln; and the weight of the shaft was enormous; two-firebricks thick. I saw that it was nice and comfortable to start with, but that I shouldn't like to be there when the kiln was beginning to wear out, for if it fell, it would take the whole building with it."

Of this Merton factory, De Morgan wrote in 1881: "I took a piece of land at Merton Abbey, and erected a building and kilns there. I first constructed a magnificent basement; and then decided it was too handsome to put to the base purposes meant for a mere basement, so I built another story, and that was in a sense the same story; but unfortunately, it proved too magnificent for what I intended; so I built another one, and so on 'til the building became a skyscraper; and then it wasn't suitable for anything I wanted and I had to move; and that was the end of the story."

Is it any wonder that De Morgan failed financially?

About that time (1881) his health gave cause for anxiety. It was feared he had tuberculosis. The doctors recommended that he spend winters in Italy. So, carrying out the doctors' orders, he attempted to operate his London factory by remote control while living much of the time in Italy. Needless to say, he did not succeed very well, although the factory continued, after a fashion, in his absence.

Tragically enough, it was found much later that the TB diagnosis was incorrect. He was merely suffering from a strained back! It could have been cured with proper care in London. Actually, he lived 37 years after the mistaken diagnosis.

He continued to make pottery, in a desultory way, with sadly diminished resources until about 1905. Then he was forced to draw the final curtain on his ceramic career. He wrote: "The last shell was pitched into the works when neuritis gripped my business thumb, and stopped my drawing. I threw art aside after 40 odd years . . . All my life I have been trying to make beautiful things, and now that I can make them nobody wants them . . . Only my extinction can make them valuable."

Alas, of all those lovers of beauty who today would give fancy prices for De Morgan ware, there was not one to come forward to enable the creator to create while life still inspired the glowing fancy and ingenious brain. ●

(This is the first of two articles on De Morgan's life. Coming: "William De Morgan: the Artist.")

Prepare Your Clay

by J. SHELDON CAREY

IF SOME of your clay reserves have dried out, if you've dug some of your own from the neighboring hills, or if you find yourself with a large number of "finished" pieces (unfired) ready for the scrap pile, you'll want to put the clay once again into a workable, plastic condition. And that's not at all difficult to do, either.

The big secret to breaking down and softening clay is to be sure it is *dry* to begin with. It sounds peculiar to learn that the first step toward wetting clay is to dry it, doesn't it? But it is true. For clay which is damp on the surface is dense and will not allow water to penetrate readily. So spread your clay out on a smooth surface in a warm place, and allow it to dry. *(Figure 1.)*

When the pieces of clay have dried completely, drop them a few at a time into a container to which water has been added. There should be enough water so that when all of your clay has been introduced a few handfuls will remain on the surface. *(Figure 2.)*

Now, *do not stir* or otherwise agitate the mixture. Probably you will have an uncontrollable desire to start mixing the batch. But agitation may make the surfaces dense and prevent the water from penetrating. Considerable time and effort can be saved if you set the container aside and allow the water to seek each dry area by itself.

The length of time needed to break down the clay depends upon the clay itself. Some clays will break down (slake) faster than others. The sample shown in the illustration, for example, soaked 14 hours before it was agitated.

When you feel sure the clay has had enough time to break down, it should be transferred to a larger container. With your hands, search out lumps that have not yet broken down. Working them through your fingers should quickly give you a smooth mixture. *(See below.)*

At this point it is a good idea to screen the mixture to eliminate all foreign matter. *(Figure 3.)* A window screen will be satisfactory; the plastic type, you will find, is most convenient. If you started with too much water, after screening leave the mixture for several hours to allow the water to rise to the surface. When it has done so, it can readily be siphoned or skimmed off.

Now all that remains is to convert the thick clay slip into a plastic mass. One of the simplest methods—requiring no special equipment—is to pour the mixture to an even thickness on a heavy cloth and cover it with a second cloth. The top cloth acts as a wick, speeding up evaporation and preventing some areas from drying more rapidly than others. You will find the clay will dry more quickly, and more uniformly, if you occasionally flip the mixture and allow the bottom cloth to beexposed. *(Figures 4 & 5.)*

The time it takes the clay to dry to a plastic and workable state may vary from several hours to several days. Check the clay from time to time, and when it no longer sticks to your fingers, pull off the top cloth and peel the clay free from the one underneath.

All that remains to be done, then, is to work the clay into a solid chunk, and place it in an air-tight container or wrapper until you are ready to use it. ●

1.

2.

3.

4.

5.

The author is head of the Ceramic Division of the Design Department, University of Kansas, Lawrence, Kan.

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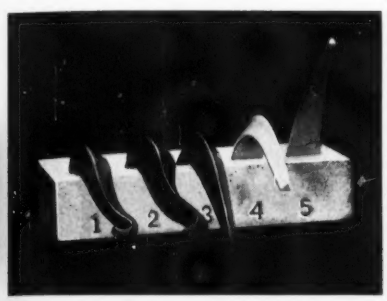

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more on ENGOBES

by KARL MARTZ

The author is kindly replying to a large number of inquiries received about his article, "Decorate with Engobes!" which appeared in the February, 1953, issue of CERAMICS MONTHLY.—Ed.

IN PRESENTING these formulas I should explain that all of my own work is done single fire and for that reason some of these formulas, particularly the slip painting slips, may not give satisfactory results when bisque fired. All of the formulas given here are for cone 04 firing.

This engobe, developed at Ohio State University, has given good results for many years:

Ferro Frit 3110	15%
Ball Clay	15
Feldspar	10
Flint	55
Bentonite	5

It is mixed thin enough to require two coats for adequate coverage since two thin coats will give better adherence than one thick coat. It works well for wet slip trailing and may be colored by the addition of prepared stains and underglaze colors.

For slip trailing on dry clay, freshly sponged, the following is very satisfactory:

Nepheline Syenite	50%
Ball Clay	20
Calcined Kaolin	20
Ferro Frit 3110	10
Powdered Gum Tragacanth	1

Mix to the consistency of thin mayonnaise and screen carefully before filling the bulb. The gum tragacanth thickens the slip so that it stands up better on the clay and does not run so readily. A slip-trailed line is thick and tends to shrink away from the body as it dries. This may be largely overcome by using a high proportion of non-plastic material in the slip, 80% in this case. If excessive shrinkage occurs in a commercially prepared engobe, the addition of powdered non-plastic material such as nepheline svenite, flint, feldspar or calcined kaolin should be of benefit. If this makes the slip too soft after firing, the addition of a little frit, 5 to 20 per cent (also a non-plastic) will increase the hardness.

Some slips, unless applied thickly, will dissolve in the glaze when fired and disappear. For slip painting it is imperative that a single brush stroke give adequate coverage for, as the Chinese say, "A leaf touched twice with the brush dies." To achieve this it is necessary to use, first, a glaze that will attack the slip as little as possible and, second, a slip with good covering power. Here are three formulas, one glaze and two slips, that I am currently using:

Transparent glaze for slip painting—

Ferro Frit 3396	50%
Nepheline Syenite	15
Borax	2
Ball Clay	12
Whiting	4
Flint	17

Slip painting slip No. 1, apply thinly—

Ferro Frit 3396	20%
Feldspar	22
Bentonite	8
Opacifier	50

The opacifier can be any of those commercially prepared, such as Zicropax or Ultrox. This may be substituted for either completely or partially with prepared stains or underglaze colors if you wish to color the slip.

Slip painting slip No. 2, heavy bodied, showing more brush texture—

Ferro Frit 3257	75%
Kaolin	25

This can be opacified with tin oxide or Zircopax or other opacifying agents with from 2 — 15% opacifier, depending on the degree of opacity desired. This is made into a slip by mixing with the following solution, prepared separately, until the desired consistency is obtained:

Glycerine	1 part
Karo Syrup	1 part
Water	2 parts

The glycerine and syrup prevent the slip from drying too quickly on the clay, permitting longer brush strokes.

Of course, commercially prepared engobes and slip paints can give satisfying results. Use those with which you are familiar and whose results are satisfactory to you. The dry, commercially prepared engobes can also be mixed with the above solution, incidentally, to give better brushability. ●

support your clay with

Removable Armatures

by RICHARD PETTERSON

SUPPORTING base for the armature can be readily made from a plaster bat moistened and drilled to take the size wooden dowel rod selected for the job. Slender dowels are satisfactory. Continual wetting of the plaster will make the drilling easier.

AN EXAMPLE of the type of figure which can be made using the simple removable armature.

COUNTERSINK an open area around the holes on the underside of the bat. This allows gripping space for the pliers, when the time comes to pull dowels out.

INSERT the dowels in the holes, wad paper over them, and then hold them firmly in place with clay.

ONE of the ceramic sculptor's real technical problems is that clay modeled into tall figures tends to sag and settle. Unfortunately, armatures of metal pipe will not do in a piece intended for drying and firing. As the clay dries it shrinks. Shrinkage would be restricted by the metal core, and the clay would crack apart.

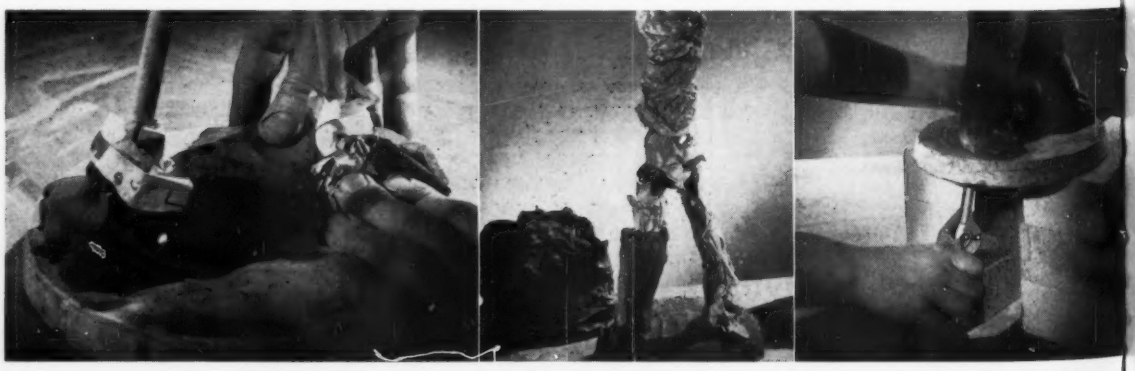
Shown here is a general type of armature in which there is a cushion of crumpled paper between the clay and solid core (wooden sticks). Before the clay piece is completely firm, the sticks may be removed, leaving only the soft, wadded paper inside the sculpture. It allows normal shrinkage of the clay without inducing cracks, and will fire out completely in the kiln.

This method is suitable for many types of ceramic sculpture. The figure, proportions, and arrangements of the armature-built figure shown are intended merely to present one workable method of supporting soft clay during modeling.

Try your own ideas and develop your own variations on this method! ●

BUILD up wadded paper over the rods, tying it in place loosely with string. Wadding or tieing too tightly will bind the dowels and prevent removal at the proper time. Now build the clay around the armature.

REMOVE the rods before the clay has progressed beyond the first stages of drying. It should be firm, but still plastic and workable. If left in too long, the rods may cause the clay to crack as it shrinks.



books

PRACTICAL POTTERY FOR CRAFTSMEN AND STUDENTS. By R. Horace Jenkins; Bruce Publishing Co., 400 N. Broadway, Milwaukee 1; $2.75.

This 185-page volume, the author says, "has been compiled to help beginners over some of the difficult places."

Mr. Jenkins opens the book with an historical account of pottery making, then proceeds to a discussion of clay and clay preparation. In a methodical fashion the processes of hand building by the strip and coil methods, mold making, throwing, turning, trimming and drying, pressing, tile making, and throwing large pieces are explained.

There is a chapter on equipping a pottery shop, giving the essential pieces of equipment and approximate costs. The section is enhanced—as is the rest of the book—with a number of diagrams and photographs.

In the interests of economy and the spirit of artistic fulfillment, recipes are offered to ceramists wanting to make their own glazes.

Then, of course, comes the "delight or despair" of firing. The author tells what to do—and what not to do—at this crucial stage of pottery making.

CUT AND ENGRAVED GLASS 1771-1905. By Dorothy Daniel; M. Barrows & Co., 114 E. 32nd St., New York 16; $7.50.

Those interested in antique glass will find this work a handy reference.

It seems that while looking through shops for antique cut glass finger bowls one day, Dorothy Daniel discovered that many of the dealers were innocently representing English and Irish ware as American. Yet, she knew, "a great deal of fine lead glass was cut here in the early years." Such was the starting point of this book.

Rather lengthy because of the 222 photographs and 50 drawings, *Cut and Engraved Glass* is a history and guide for owners and collectors of American glassware.

Mrs. Daniel's study of the field indicates there should be a division of the production span into definite periods—Early American (1771-1830), and Middle (1830-1880), and Brilliant (1880-1905). All important motifs, patterns, and trade-marks of each period are chronicled.

After intensive research in the company of many of the nation's authorities on glass, she writes of the cutting, engraving, and etching of glass; the making of glass; the detection of imitations of American cut glass; and colored cut glass.

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Margaret Stierlin of Chicago tells how to give elementary adult classes the greatest possible benefit and enjoyment. (Good reading for the student as well as the teacher!)

MORE ON PADDLE-POTS—
Another exciting, illustrated article by Donald Wood of Ohio State. This time he builds some pots using the primitive paddle and a plaster mold.

UNIQUE SHAPES FROM THE WHEEL—
Sheldon Carey, of the University of Kansas, presents some fascinating wheel-thrown shapes—and shows you how he does it.

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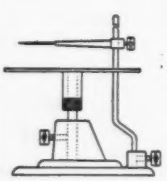

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learn how to

Use Plaster

You will note from Dorothy Perkins' article on "Free Form" which begins on Page 9 of this issue that she uses a plaster press mold as an aid to constructing free shapes of clay. Mrs. Perkins includes information here on how to make the press mold and in particular a good way to mix the plaster. Her instructions follow.—Ed.

PLASTER MOLDS offer a variety of uses to the ceramist. Press molds are particularly helpful, and one mold can be made to produce a wide variety of shapes. They can be made directly from a clay hump, as shown in the accompanying illustration. Here the hump has been placed on a clean surface, with a line drawn to indicate the desired thickness of the plaster mold. The plaster is poured over the hump by hand until the desired thickness is built up. The flexible scraper can be used to finish the outside of the mold before the plaster is set. The bottom of the mold should be flattened so it will rest solidly on a work-table while clay is being pressed into it.

After the original clay hump has been removed, the inside of the mold may have an uneven surface. Whether or not it has will depend upon the amount of care expended upon the hump. If it is uneven, the flexible scraper may be used.

Plaster may be mixed in such a way as to prolong the period of plasticity. After adding the plaster to the water in the correct proportions, allow it to "slake." (To "slake" means to permit all the plaster to become saturated, *with no stirring.*) When the slaking action is completed—from one to three minutes—sweep the plaster and water together thoroughly, but only until there is no free water standing on top of the mix. Thereafter, stir the mix for a few seconds every half-minute or so, just enough to keep the plaster and water from separating. Do not stir it continuously. This method of mixing will slow down the setting of the mix.

A so-called "slow mix" is highly desirable here, as it will allow a longer period over which the plaster will stay fluid for use in building up the mold. Also, it allows a longer period during which the outside of the mold may be shaped and finished. ●

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answers to questions

CONDUCTED BY KEN SMITH

Q. Several of my vases have crazed and now leak. Is there any way I can make them watertight without refiring?

A. If a fired piece seeps water, a temporary measure might be to warm the piece in an oven and then pour melted paraffin inside. Roll the piece until the inside is completely coated. This coating will help seal the pores, although the paraffin, like any wax or shellac, will turn milky white when water is left standing in the vase.

Q. Is there anything known concerning the use of cerium oxide in glazes? I can find nothing concerning it other than my own personal trials.

A. Cerium oxide does not appear to have very promising properties. The most recent experimental work reported was in 1939. The researcher reports a decrease in crazing when using cerium oxide. Also, he says, it has opacifying qualities if used in large amounts. In lead- or boron-glazes it will give a yellowish tinge.

Q. What is Gold Essence, and how is it used?

A. Gold Essence is a solution containing a very small amount of gold, similar to liquid bright gold which is used in overglaze work or china painting. The Essence is actually a solvent for liquid gold and may be used as an effective brush cleaner and for reclaiming or thinning liquid bright gold which has dried out. It should be used sparingly and not as a substitute for gold, as it is very weak. Be careful you don't thin the liquid gold too much, or the fired result will be purple rather than gold.

Q. Can you give a formula or instructions for refiring and mending a broken piece of pottery or porcelain?

A. There is a prepared ceramic cement on the market which may be used to mend cracks or cement pieces together. When fired it burns white. (There would be danger, however, in refiring old pieces. The soft overglaze decorations might burn out.) A regular glue or plastic cement which hardens without firing can also be used and gives satisfactory results.

Q. Why do I have trouble casting satisfactorily with a red firing clay? I have tried clays from local deposits as well as prepared commercial red clays.

A. There are inherent impurities or at least chemical differences in all natural red burning clays which make them difficult to deflocculate and cast properly. Most red clays can be deflocculated to a degree using one or more deflocculants such as sodium silicate, calgon, or one of the phosphates. The type or amount to use for best results is a matter of experimentation. You will find that larger percentages of both deflocculant and water will be necessary than with most white casting bodies. For the sake of better casting qualities, some persons prefer to simply stain a good white casting body with iron oxide to burn the particular shade of red desired.

Direct your questions to Questions Editor, "Ceramics Monthly," 3494 N. High St., Columbus 14, Ohio. Please enclose a stamped reply envelope. Questions of general interest will appear in this column.

Delayed Crazing

(*Begins on Page 13*)

"tired" and may fail under a load of long duration.

A similar situation may occur in a glaze, if, when it comes from the kiln, it is under a small tensile stress. The stress may be so small that the elasticity of the glaze resists it and prevents immediate crazing. However, in time the glaze will become fatigued and will craze. The crazing may occur without the assistance of any outside agency or it may be "touched off" by a sudden temperature change, a sharp blow, or an abrasion of the glaze surface. Delayed crazing of this kind may occur even on well-vitrified bodies.

The only satisfactory method of preventing this type of delayed crazing is to be sure that no tensile stress exists in the glaze as it comes from the kiln. As in the case of the first type of delayed crazing, it is well to have a slight compressive stress in the glaze. This can be accomplished only through such adjustments in composition of body and/or glaze as will give the proper relationship of the coefficients of expansion, i.e., having that of the glaze slightly less than that of the body. ●

An Open Letter

(*Begins on Page 3*)

the finest and most helpful piece of literature on pottery available in the world today . . . despite its *many* limitations and omissions.

But when we come to his pots, it is a different story. They are, to me, disappointing; stuffy; heavy; and mid-Victorian. He seems to be oblivious of the grand trend of all art, which flows *away* from realism *toward* impressionism in some form or other. One would have to be awfully thick skinned, aesthetically speaking, not to feel this impact. His pots show that honest, solid quality, which is so "veddie, veddie" English; and incredibly dull.

His constant harping on our lack of cultural roots sounds as up to date as the writings of Mrs. Trollope, who made the same startling discovery in about 1840 on her trip to America, and expressed herself in no uncertain terms. She was most unfavorably impressed by a very common ceramic American item, the brown cuspidor; made of Bennington pottery, probably. I recommend this book to Mr. Leach, and other visiting Englishmen.

—HENRY BOLLMAN
East Gloucester, Mass.

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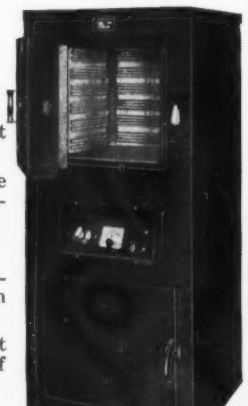

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itinerary

(*Begins on Page 7*)

CALIFORNIA, Los Angeles
March 20-29
The Fifth Annual California Hobby Show is to be held at the Shrine Convention Hall, 700 W. 32nd St. For show details write Fred de Liden, 417 N. Figueroa, Los Angeles 12.

DISTRICT OF COLUMBIA, Washington
March 5-29
Showing of the 61st Annual Exhibition of the Society of Washington Artists. At the Smithsonian. By members and non-resident members within a 25-mile radius of Washington.

FLORIDA, Clearwater
March 25-April 19
Exhibition of the 17th Ceramic National circuit show. Florida Gulf Coast Art Center.

ILLINOIS, Urbana
March 15-April 12
"American Craftsmen—1953," is part of the annual Festival of Contemporary Arts at the University of Illinois. Seventy-five works by 50 of the country's leading craftsmen. Installation in the Union Building.

MICHIGAN, Bloomfield Hills
Through March 15
Cranbrook Academy of Art is holding its Fourth Biennial Exhibit of Textiles and Ceramics. Some 100 artists from all over the U.S. are displaying their works.

MISSOURI, St. Louis
April 6-11
The National Art Education Association will hold its Second National Convention at Hotel Jefferson. Theme: "Art and Human Values." Exhibition of materials and equipment.

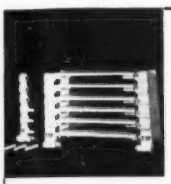
NEW JERSEY, Asbury Park
May 13-17
The Eastern Ceramic and Hobby Show of 1953 is to be held at Convention Hall. For further details contact Jerry Gasque, 77 Ridgecrest Ave., Staten Island 12, N. Y.

NEW YORK, Niagara Falls
March 19-21
Niagara County Ceramic Guild will hold an exhibit at the Niagara Mohawk Building. Theme of the show will be "May Pole Dance." Entries will include pottery free expression, unusual glazes, slip casting, sculpture, and figurines.

TEXAS, Dallas
Through March 8
Pottery and ceramic sculpture of Texas residents on display in the Fifth Texas Craft Exhibit, sponsored by the Craft Guild of Dallas. At the Dallas Museum of Fine Arts, Fair Park, Dallas 10.

Dallas
April 23-26
The Southwest Ceramics and Hobby Show of 1953, to be held in the Science Building at Fair Park. For details, write Lurline Pattillos, Exhibit Chairman, 4407-A Parry Ave.

WASHINGTON, Seattle
March 8-April 8
Henry Gallery, the University of Washington, will present the Northwest Craftsmen Exhibition. Washington, Oregon, Montana, Idaho, and British Columbia will be represented.



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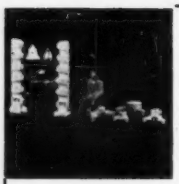

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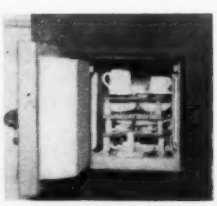

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Show Time

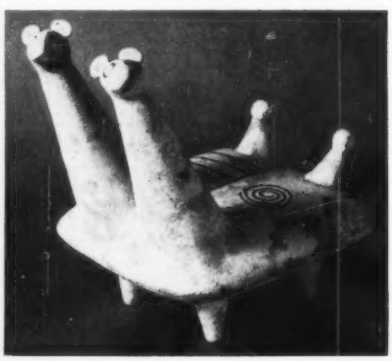
Cranbrook's "One Hundred"

If you're looking for examples of work by well-known American ceramists, the place to be this month (until March 15) is at the Fourth Biennial Exhibition of Textiles and Ceramics at the Cranbrook Academy of Art, Bloomfield Hills, Mich. It's an invitational show to which 100 artists were asked to send examples of their work.

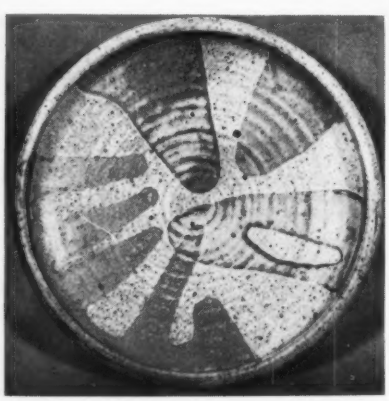
You may view the submitted pieces from 2 to 5 P.M. daily, except Mondays.

Should you miss getting to Cranbrook this month, you still have a chance to see at least a part of the exhibition. A portion of it will be circulated by the traveling exhibition service of the Smithsonian Institution.

No jury presided at the show, of course, but museum purchases were made. This year the ceramists receiv-



PURCHASE PRIZES at Cranbrook's Fourth Biennial Exhibition included two headed animal by John Caruthers, Los Angeles, and stoneware platter by Karen Karnes, Black Mountain, N.C.



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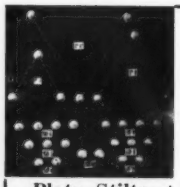

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ing the honor were John Caruthers, Los Angeles, for his two-headed animal ceramic sculpture; Karen Karnes, Black Mountain, N. C., a stoneware platter; and Peter H. Voulkos, Archie Bray Foundation, Helena, Mont., a stoneware storage jar. The Caruthers and Karnes pieces are shown on page 32.

Scripps' "New Ideas"

As the Cranbrook invitational show ends in Michigan, another across the continent begins. The beginning show (March 17-May 14) is the 10th annual Invitational Ceramics Exhibition of the West Coast, which will take place on the Scripps College campus, Claremont, Calif.

The committee in charge—Millard Sheets, Richard Petterson, Jean Goodwin Ames, and William Manker—have a "new idea" show ready that will encompass indoor and outdoor garden sculpture, architectural ceramics, and special containers for artistic flower arrangements.

Illini Invitational

Invitational ceramic shows seem to be particularly popular this month. The University of Illinois also has one, part of its annual Festival of Contemporary Arts. Having for a theme "American Craftsmen—1953," the exhibit will be installed in the Main Lounge of the Illini Union Building from March 15 through April 12.

There will be 75 works in the display, done by 50 of the country's leading craftsmen, and will include many from the fields of ceramics, design, and enameling. The participants in the show are chosen from prize winners and consistent exhibitors in leading national exhibitions.

To provide activity to the Festival, a series of lecture demonstrations will be given by some of the craftsmen. For the ceramists, F. Carlton Ball of Southern Illinois University will hold forth on ceramic techniques on the afternoon of March 27. Open to the public, the lecture-demonstration will be in Room 314 of the Union at 4 o'clock.

"At Home with Ceramics"

Home and garden ceramics shows are becoming more and more popular: witness the coming Scripps College exhibit (see above), and the just-ended 59th Annual Exhibition of the New York Society of Ceramic Arts which took place in New York City. "At Home with Ceramics" it was called, and was just what it says. Entries were of pottery, sculpture, enamels, and glass.

The 61-year-old New York society is made up of artist-craftsmen and

NEW YORK SOCIETY of Ceramic Arts Show, entitled "At Home with Ceramics," included the unglazed terra cotta cock above, by Ben Abadie of Wilton, Conn., and the copper luster bowl below, by Dido Smith, New York.

sculptors who believe that "trained craftsmen are an essential part of our machine era and that by devoting themselves to the highest standards of workmanship they can be a guiding force in the field of industrial production."

Hobby Show East

Are you a non-professional ceramist who would like to exhibit some of your ware? There are hobby shows in both East and West to accommodate you. In the New Jersey area is the Eastern Ceramic and Hobby Show of 1953 at Convention Hall in Asbury Park, May 13-17.

There'll be an amateur hobby-craftsman competitive exhibit that will be conducted for the duration of the show. An array of awards will be given.

The contest will be judged by the persons attending the show who can offer credentials indicating they are commercially engaged in some phase of the ceramic hobby field.

Jerry Gasque, 77 Ridgecrest Ave., Staten Island, N. Y., is manager of the show, so contact him for additional information.

Hobby Show Southwest

If you live in the Texas area, the Southwest Ceramic and Hobby Show is the non-professional's chance to exhibit. This show, sponsored by the Southwest Ceramic Association, will be in the Science Building, Fair Park, in Dallas. Dates: April 23-26.

This show, too, will have exhibits by ceramists, potters, china painters, and a hobbyist competitive display. A grand prize of $50 will be given for the most outstanding piece entered in the show. And a first, second, and third prize will be awarded in each of 13 divisions. Judges will be impartial prominent persons qualified in the ceramic and art fields.

For entry blanks and further information, write Lurline Pattillos, Exhibit Chairman, 4407-A Parry Ave., Dallas.

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